**AP STAT- Ch. 20 notes HYPOTHESIS TESTS**

EXPERIMENT: What is the true % of red dice in the bag??

**HYPOTHESIS TESTS (aka Tests of Significance)**

* Used to test…
* Checks hypothesized population parameter …
* 4 parts:

1. **HYPOTHESES:**

NULL HYPOTHESIS:

FORM:

Assumed…

We can conclude…

For a 1-Proportion Sample:

ALTERNATIVE HYPOTHESIS:

FORM:

For a 1-Proportion Sample:

1. **CONDITIONS:**

* Always…
* For a 1-proportion sample, the conditions are:
* When all the conditions are met, then we can use the …

1. **MECHANICS:**

\*\* All the calculations are done here\*\*

TEST STATISTIC:

Test Statistic = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

For 1-Proportion samples: Z-SCORES

P-VALUE:

* Use the test statistic (Z) to find this
* Use the symbol in the Ha to help

Ha P-Value

1. **CONCLUSION:**

***\*\*\* Note: If the P-value is very small, we don’t believe our claim***

TWO CHOICES:

1)

2)

\*\* How small is small enough?

* We compare …
* This number is called…
  + Symbol:
  + Usually:
* If P-Value is below this level…

WRITING THE CONCLUSION: Always 2 sentences!!

**EXAMPLE:** It is generally believed that about 12% of children are nearsighted. A random sample of 150 children from a local school district is taken and 21 are found to be nearsighted. Does this show evidence that the school district has a higher percentage of nearsightedness than the national average?

**EXAMPLE:** A 1996 report stated that 90% all American homes have at least one smoke detector. A city's fire dept. has been running a public safety campaign, and wonders if this effort has increased the percentage of smole detectors in homes. So building inspectors visit 400 randomly selected homes and find that 376 of them have smoke detectors. Is this strong evidence that the local rate is higher than the national rate?

**EXAMPLE:** The percent of male births has been claimed to be 52% in the US. There has been some changes in prenatal care over the past 10years, and we are wondering if the percent of male births has changed. We took a random sample of 550 births and found that 56.9% of them were male. Test the claim.

**p. 476 #1, 3, 5, 9, 12, 14**